

1 **Abstract of the Invention**

2       A free weight assistance and training device includes a base  
3 and a generally upright weight support structure mounted on and  
4 extending upwards from and over the base. A free weight support  
5 bar is connected to a computer-controlled weight tensioning device  
6 which is mounted on the base generally adjacent the upright weight  
7 support structure, the connection between the free weight support  
8 bar and the computer-controlled weight tensioning device consisting  
9 of at least two cables movably mounted on the upright weight  
10 support structure. The computer-controlled weight tensioning  
11 device, the at least two cables and the free weight support bar  
12 operatively cooperate with each other such that tensioning force  
13 applied by the computer-controlled weight tensioning device via the  
14 at least two cables to the free weight support bar controllably  
15 decreases the amount of downwards force exerted by the free weight  
16 support bar and weights thereon.